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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

Krishnan Chari, et al

RANDOM ARRAY OF
MICROSPHERES

Serial No. 09/942,241

Filed 29 August 2001

Group Art Unit: 1634

Examiner: Betty J. Forman

I hereby certify that this correspondence is being deposited today with the United States Postal Service as first class mail in an envelope addressed to Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Christine Tolhurst
Christine Tolhurst

Date: September 6, 2006

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Commissioner of Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

APPELLANTS' REPLY BRIEF

This Reply Brief is necessitated by several "new points of argument" in the Examiner's Answer mailed July 12, 2006. Each new point of argument is addressed below in turn.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,714,340	SUTTON et al	2-1998
4,258,001	PIERCE et al	3-1981
6,599,668	CHARI et al	7-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections • 35 USC § 102

A. Claims 1-8, 13, 15-17, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Sutton et al (U.S. Patent No. 5,714,340, issued 3 February 1998).

A claim is anticipated only if each and every element as set forth in the claim is found either expressly or inherently described in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the claim.

Sutton is directed to an immunoassay element for assaying ligands, wherein the element includes a layer containing a labeled ligand, a bead spreading layer, a cross-linked hydrophilic polymer layer including receptors, and a support. Sutton fails to expressly or inherently disclose a single layer of microspheres, fails to expressly or inherently disclose a single layer of microspheres randomly dispersed

with a uniform density in a fluid on a substrate, and fails to expressly or inherently mention a gelling agent.

Sutton fails to expressly disclose a single microsphere layer as presently claimed. Neither the beads of the bead spreading layer nor the receptors of the cross-linked hydrophilic polymer layer can be compared to the microsphere-single layer of claim 1. The layers of Sutton which contain beads are referred to as a bead spreading layer, comprising a stack of beads (see col. 9, lines 59-63, and Fig. 1) or a receptor bead layer, comprising clusters of beads as described at col. 10, lines 1-11, referenced in the Final Office Action of June 21, 2005, at page 3, lines 3-4, and as shown in Figs. 3-5. As noted by the Examiner, the claims are drawn to a coating composition "consisting of a single layer of microspheres randomly dispersed with a uniform density in a fluid on a substrate, the fluid containing a coating aid and a gelling agent, wherein the gelling agent forms an immobilizing gel." The claim recites "a single layer of microspheres". MPEP 2111.01 requires that the wording of a claim be given its plain meaning. MPEP 2111.01 II. States "'Plain meaning' refers to the ordinary and customary meaning given to the term by those of ordinary skill in the art" OneLook® Dictionary at www.onelookdictionary.com indicates that the plain meaning of a layer is "noun: thin structure composed of a single thickness of cells; noun: single thickness of usually some homogeneous substance" Figs. 2A, 3A, 4A, and 5A of the present invention show a single layer of microspheres, as opposed to Fig. 1 of Sutton, showing a dimensional layer. In addition, the claim language states "a single layer of microspheres", not "a single layer." Review of U.S. patent claims language bears out the common definition, indicating that a layer of microspheres is commonly understood to refer to a single microsphere layer. See the Figs. of U.S. Pat. Nos. 6, 896,757 (claiming a single layer of microspheres), 6,815,043 (claiming a single layer of microspheres), 6,737,103 (claiming a single layer of microspheres), and 6,153,128 (claiming a single layer of microspheres).

The present claims also require a single layer of microspheres randomly dispersed with a uniform density in a fluid on a substrate. The receptor beads shown in Figures 3-5 of Sutton et al., and discussed at col. 10, lines 3-11, form clusters in a cross-linked hydrophilic polymer layer. In contrast, the claimed invention is directed to a coating composition consisting of a single layer of microspheres randomly dispersed with a uniform density on a substrate, as explained and

exemplified in Example 2, at page 11, lines 21-28, of Appellants' specification. In Example 2, comparative Formulation 2 corresponds to Sutton et al., and results in streaks caused by aggregation of the beads in a non-Poisson distribution (see pages 11-12 of the specification, and corresponding Figs. 4A-5B).

Sutton also fails to expressly disclose a gelling agent, wherein the gelling agent forms an immobilizing gel. Neither does Sutton inherently disclose a gelling agent. As previously noted, Formulation 2 of the present invention uses a polymer designated as class II of the specific receptor zone coating polymers in Sutton et al. at col. 6, line 55, - col. 7, line 21. The polymer does not form an immobilizing gel, resulting in non-random distribution of beads, that is, agglomeration or clustering of beads in the polymer. In addition, one skilled in the art would expect the additional disclosed classes provided by Sutton et al. to act similarly. See, for example, U.S. Pat. No. 6, 214, 376, col. 3, line 67 – col. 4, line 10. Thus, the demonstration that class (II) poly(vinyl alcohol) does not immobilize beads or microspheres indicates that the polymers of (I)-(VI) are not inherently gelling agents.

Since Sutton fails to expressly or inherently disclose a single layer of microspheres, fails to expressly or inherently disclose a single layer of microspheres randomly dispersed with a uniform density in a fluid on a substrate, and fails to expressly or inherently mention a gelling agent, Sutton fails to anticipate each and every element as set forth in the claim.

B. Claims 1-24 and 26-28, 30-34 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Pierce et al (U.S. Patent No. 4,258,001, issued 24 March 1981).

A claim is anticipated only if each and every element as set forth in the claim is found either expressly or inherently described in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the claim.

Pierce et al. is directed to an element for analysis or transport of a liquid, wherein the element includes particles with an adhesive surface forming a three-dimensional structure. Pierce fails to disclose a single layer of microspheres.

Pierce fails to disclose a single layer of microspheres. Pierce et al. forms a three-dimensional particulate structure in a single layer, as contrasted with Appellants' claimed single layer of microspheres in a fluid or gel. As discussed above,

the phrase “a single layer of microspheres”, when given its plain meaning is not the same as Pierce, which specifically teach a composition consisting of a single layer which contains microspheres. Although Appellant acknowledges the Pierce teaches “a single layer”, the Applicants do not acknowledge that the layer of Pierce is a single microsphere layer as presently claimed. This is exemplified in Figures 2-14, cited in the Office Action of February 9, 2004, of Pierce et al. As stated at col. 6, lines 49-51, of Pierce et al., formation of a coherent, three-dimensional lattice by organopolymeric particles is “an essential feature of the invention.”

The present claims also require a single layer of microspheres randomly dispersed with a uniform density in a fluid on a substrate. Pierce fails to disclose the claimed microsphere-single layer, which is randomly dispersed with a uniform density in a fluid on a substrate

Since Pierce fails to disclose a single layer of microspheres and a single layer of microspheres randomly dispersed with a uniform density in a fluid on a substrate as presently claimed, Pierce fails to anticipate each and every element as set forth in the claim.

C. Claims 1-2, 4, 9-12, 15-17, 21-23, 26-28, 30-31, 33-34 and 43 are rejected under 35 U.S.C. 102(e) as being anticipated by Chari et al (U.S. Patent No. 6,599,668, filed 3 August 2001).

A claim is anticipated only if each and every element as set forth in the claim is found either expressly or inherently described in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the claim.

Chari et al, is directed to a method of forming a color filter array on a surface by applying a dispersion of randomly disposed colored beads on the surface, wherein the dispersion itself forms the color filter array. Chari et al. does not teach or disclose microarrays, or a single layer of microspheres randomly dispersed with a uniform density in a fluid on a substrate as presently claimed.

The Examiner indicates that the claimed composition and microarray are not limited to biological and chemical functionality. Referring again to OneLook® Dictionary at www.onelookdictionary.com and, specifically, Wikipedia, Free Online Dictionary, the term “microarray” is defined as a biological assay. Therefore the term “microarray” itself provides the necessary biological limitation.

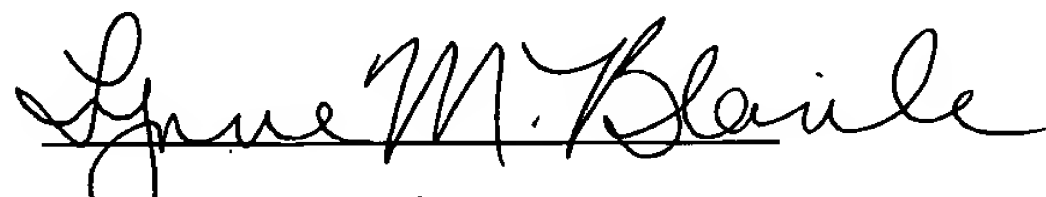
One of ordinary skill in the art would understand that a filter array, as claimed and described in Chari, is a device used in imaging, as indicated by the U.S. Filed of Search and Classification of Chari, 430/7 (Radiation imagery chemistry: process, composition, or product thereof / Color) and, secondarily, 430/511 (Radiation imagery chemistry: process, composition, or product thereof / Filters differing spectral regions in different areas of the filter, e.g., color screen). In addition, there is no enabling disclosure relating to microarrays in Chari, relating to bioactive agents and biological probes, as is found in the present specification at pg. 7, lines 21 – 28, Example 4, pgs. 13 - 14.

In addition, Chari is silent with respect to microspheres randomly dispersed with a uniform density. The courts have stated that claims drawn to an apparatus must be distinguished from the prior art in terms of structure rather than function, see *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA1959). The present claims require microspheres randomly dispersed with a uniform density, which structurally distinguishes the present inventive microarray from the filter array of Chari, in which no specific distribution is disclosed.

Since Chari fails to disclose a microarray and a single layer of microspheres randomly dispersed with a uniform density in a fluid on a substrate as presently claimed, Chari fails to anticipate each and every element as set forth in the claim.

For these reasons, as well as those presented in Appellants' Brief, Appellants respectfully submit that the Final Rejections under 35 U.S.C. 102(b) and (e) is in error, and they request its reversal by the Honorable Board.

Respectfully submitted,



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